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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------------|
| 10/797,818 | 03/10/2004 | Wen Lin Lo | 370.8013USU | 6046 |
| 4586 7590 07/09/2007 ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043 | | | EXAMINER ARNOLD, ERNST V | |
| | | | ART UNIT 1616 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/797,818

Applicant(s)

LO, WEN LIN

Examiner

Ernst V. Arnold

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-10 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/13/07 has been entered.

Claims 1-7 have been withdrawn. Claims 7-11 are under examination. Claims 12-15 have been cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burrell et al. (US 5,454,886).

Applicant claims a method for making an anti-microbial sanitary ware.

Determination of the scope and content of the prior art

(MPEP 2141.01)

Burrell et al. teach methods of forming an anti-microbial material containing one or more anti-microbial metals coated on the substrate wherein the antimicrobial metal is silver, copper, zinc or alloys thereof, the method is magnetron sputtering, and a different material is co-, sequentially or reactively deposited to produce a composite where the different material is a nitride or carbide of an inert biocompatible metal such as titanium (Claims 1, 2, 4, 6 and 8 and column 9, line 63-column 10, line16). The Examiner interprets co-deposited to mean simultaneously deposited. Burrell et al. disclose that suitable substrates include steel, aluminum, latex, nylon, silicone, polyester, glass, ceramic, paper, cloth and other plastics and rubbers thus reading on instant claim 10 (Column 7, line 65-column 8, line1). Burrell et al. disclose a preferred substrate temperature of -20 to 200 °C (Column 9, lines 55-57). Burrell et al. disclose sputtering pressure of 7 mTorr (Column 11, line 54 and column 13, Table 1, for example). Burrell et al. disclose methods using a range of power settings from 0.1 kW to 0.5 kW for the deposition of silver (Column 15, Table 5).

Burrell et al. provide some guidance on the size of silver particles deposited onto a silicon wafer using RF magnetron sputtering which resulted in a grain size of 60-150 nm (Column 12, example 12, lines 14-43). Burrell et al. teach observed nanometer scale changes in surface morphology and topography are indication of atomic disorder

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in the silver metal created by mismatched atoms (Column 12, lines 44-49). In the absence of results to the contrary, it is the Examiner's position that the method of Burrell et al. would form metal particles of the second metal, silver, having a size of less than 100 nm and having said metal particles, silver, dispersed in the protective layer.

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

1. Burrell et al. do not expressly teach a method for making an anti-microbial sanitary ware comprising placing a substrate in a sputtering chamber; simultaneously sputtering a first metal target of a first metal and a second metal target of a second metal through closed-field unbalanced magnetron sputtering techniques; reacting the first metal into a metal compound and subsequently depositing said metal compound on the substrate thereby forming a protective layer; and generating metal particles of the second metal having a size of less than 100 nm and dispersing said metal particles in the protective layer wherein the metal compound is selected from the group consisting of metal nitrides and metal carbides.

Finding of prima facie obviousness

Rational and Motivation (MPEP 2142-2143)

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make an anti-microbial sanitary ware comprising placing a substrate in a sputtering chamber; simultaneously sputtering a first metal target of a

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first metal and a second metal target of a second metal through closed-field unbalanced magnetron sputtering techniques; reacting the first metal into a metal compound and subsequently depositing said metal compound on the substrate thereby forming a protective layer; and generating metal particles of the second metal having a size of less than 100 nm and dispersing said metal particles in the protective layer wherein the metal compound is selected from the group consisting of metal nitrides and metal carbides , as suggested by Burrell et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Burrell et al. provide all the essential steps for one of ordinary skill in the art to follow and produce the instant invention.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Response to arguments:

Applicant asserts that Burrell et al. remains silent with respect to the size of the "second metal". The Examiner cannot agree. Burrell et al. provide some guidance on the size of silver particles deposited onto a silicon wafer using RF magnetron sputtering which resulted in a grain size of 60-150 nm, which reads upon the instant "less than 100 nm" size (Column 12, example 12, lines 14-43). Burrell et al. teach observed nanometer scale changes in surface morphology and topography are indication of atomic disorder in the silver metal created by mismatched atoms (Column 12, lines 44-49). In the absence of results to the contrary, it is the Examiner's position that the method of Burrell et al. would form metal particles of the second metal, silver, having a size of less than 100 nm and having said metal particles, silver, dispersed in the protective layer.

Conclusion

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable, pending a search update at the time of allowance, if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

No claims are allowed.

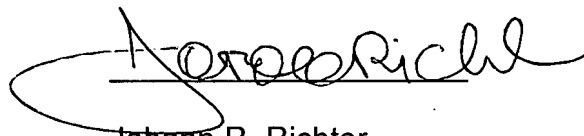
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ernst Arnold
Patent Examiner
Technology Center 1600
Art Unit 1616

A handwritten signature in black ink, appearing to read "Johann Richter", with a large, loopy flourish on the left side.

Johann R. Richter
Supervisory Patent Examiner
Technology Center 1600